We Claim:

1. An optical recording medium comprising a recording layer containing, as a photoresponsive material, metal chalcogenide nanoparticles, wherein the metal chalcogenide nanoparticles have an average particle size of 1 to 20 nm and have a surface modified with an adsorbable compound.

2. The optical recording medium according to claim 1, wherein the recording layer is a layer formed by preparing the metal chalcogenide nanoparticles as a colloidal dispersion by a chemical synthesis, and applying the colloidal dispersion.

3. The optical recording medium according to claim 1, wherein the metal chalcogenide nanoparticles comprise: at least one element selected from the elements of the groups 8, 1B and 2B and the 4th to 6th periods of the groups 3B, 4B and 5B of the Periodic Table; and at least one element selected from the elements consisting of the group 6B of the Periodic Table.

4. The optical recording medium according to claim 2, wherein the colloidal dispersion is prepared by the steps of:

(1) mixing a precursor solution containing: at least one element selected from the elements of the groups 8, 1B and 2B and the 4th to 6th periods of the groups 3B, 4B and 5B of the Periodic Table; and a precursor solution containing at least

one element selected from the elements of the group 6B of the Periodic Table, in a high-boiling organic solvent at 100 to 350°C in an inert gas atmosphere, so as to react the precursors to form a reaction mixture including nanoparticles;

(2) adding a flocculant to the reaction mixture obtained in step (1) to aggregate and precipitate the nanoparticles, and separating the precipitated nanoparticles from a supernatant liquor in the resulting reaction mixture;

(3) re-dispersing the precipitated nanoparticles collected in step (2) in an organic solvent; and

(4) repeating the precipitation and re-dispersion to remove a precursor-forming organic matter and the high-boiling organic solvent while holding the high-boiling organic solvent adsorbed to the nanoparticles to such an extent that the precipitated nanoparticles can be re-dispersed in an organic solvent.

5. The optical recording medium according to claim 1, wherein the nanoparticles are crystalline.

6. The optical recording medium according to claim 1, which comprises a substrate, a first dielectric protective layer, the recording layer, and a second dielectric protective layer in this order.

7. The optical recording medium according to claim 1, which is of rewritable type capable of recording, reproducing and erasing information through changes in reflectance of the recording layer, which are made by irradiating the nanoparticles with first light energy to make them amorphous and by irradiating the nanoparticles with second light energy that is smaller than the first light energy to make them crystalline.

8. The optical recording medium according to claim 1, which is of write once type capable of recording information through a change in reflectance of the recording layer, which is made by an irreversible phase change caused in at least one of the nanoparticles and the vicinities thereof by giving light energy.

9. The optical recording medium according to claim 1, wherein the metal chalcogenide nanoparticles are mono-dispersed particles.

10. The optical recording medium according to claim 1, wherein the adsorbable compound is at least one selected from the group consisting of alkylphosphine oxides, alkylphosphines, and compounds containing -SH, -CN, $-NH_2$, $-SO_2OH$, -SOOH, $-OPO(OH)_2$ or -COOH.

11. The optical recording medium according to claim 4, wherein the total number of moles of the element of group 6B is 0.001% to 0.5% based on the weight of the high-boiling organic solvent.

12. The optical recording medium according to claim 4, wherein the high-boiling organic solvent is trioctylphosphine oxide (TOPO).

13. A method of optical recording comprising irradiating the optical recording medium according to claim 1 with a semiconductor laser beam having an oscillation wavelength ranging from 200 to 600 nm.